

# AN OUTDOOR STORAGE CONTAINER HAVING HINGED AND REMOVABLE LIDS

## CROSS-REFERENCE TO RELATED APPLICATIONS

**[0001]** This application claims priority to and contains subject matter which is related to co-assigned U.S. Design Application No. 29/193,656, entitled "Storage Box", filed November 12, 2003 [attorney docket no. 2258.001], the disclosure of which is incorporated by reference herein in its entirety.

## FIELD OF THE INVENTION

**[0002]** This invention relates, generally, to a storage container, more particularly, to a storage container having hinged lids mounted on both ends and a centrally-located removable lid.

## BACKGROUND OF THE INVENTION

**[0003]** The popularity of outdoor activity has promoted increased design and manufacture of outdoor furniture, for example, for use by the pool, near the slopes, or on the deck. Included among the types of outdoor furniture commonly available include storage containers, for example, supply cabinets, ice chests, and buffet tables, and the like. However, conventional storage containers are typically limited to a single function, for example, storage, and do not provide multiple functions. In addition, conventional storage containers do not facilitate use by the end user. Thus, there is a need in the art to provide multiple function storage containers that are versatile and provide ease of use.

**[0004]** Aspects of the present invention overcome these and other disadvantages of the prior art storage containers, in particular, prior art outdoor storage containers.

## SUMMARY OF ASPECTS OF THE INVENTION

**[0005]** One aspect of the present invention is a storage container including an enclosure having an open top, a bottom, a first end, and a second end opposite the first end; a first lid pivotally mounted to the first end, the first lid adapted to cover at least some of the open top; and at least one second lid detachably mounted between the first end and the second end, the second lid adapted to cover at least some of the open top. In one aspect of the invention, the storage container further includes a third lid pivotally mounted to the second end, the third lid adapted to cover at least some of the open top.

**[0006]** Another aspect of the invention is a hinge assembly for use with a storage container having a lid and an end panel, the lid having a through hole, the hinge assembly including at least one hinge block mountable to the end panel, the at least one hinge block having a through hole; and a circular rod adapted to engage the through hole in the at least one hinge block and engage the through hole in the lid; wherein the lid can freely rotate about the circular rod.

**[0007]** A further aspect of the invention is a liquid collector for a lid of a storage box, the liquid collector comprising: an elongated member having an elongated recess in the elongated member for collecting liquid and means for mounting the member to the lid wherein the elongated recess is positioned to collect liquid discharged from the lid.

**[0008]** Thus, aspects of the present invention provide improved storage containers, for example, improved storage containers for outdoor use. Aspects of the present invention combine the features of storage and serving in a single convenient and user-friendly container. Though aspects of the present invention are suitable for use outdoors, certain aspects of the present invention are also amenable to indoor use.

## BRIEF DESCRIPTION OF THE FIGURES

**[0009]** The subject matter that is regarded as the invention is particularly pointed out and distinctly claimed in the claims at the conclusion of the specification. The foregoing and other objects, features, and advantages of the invention will be readily understood from the following detailed description of aspects of the invention taken in conjunction with the accompanying drawings in which:

**[0010]** FIGURE 1 is a perspective view of a storage container according to one aspect of the present invention.

**[0011]** FIGURE 2 is a plan view of the storage container shown in FIGURE 1.

**[0012]** FIGURE 3 is a front elevational view of the storage container shown in FIGURE 1, where the rear elevational view is a mirror image thereof.

**[0013]** FIGURE 4 is a right side elevational view of the storage container shown in FIGURE 1, where the left side elevational view is a mirror image thereof.

**[0014]** FIGURE 5 is a perspective view of another aspect of the present invention, where the outer lids of the storage container of FIGURE 1 are shown partially opened.

**[0015]** FIGURE 6 is a perspective view of another aspect of the invention, where the outer lids of the storage container of FIGURE 1 are shown opened to a horizontal position.

**[0016]** FIGURE 7 is a perspective view of another aspect of the present invention, where the outer lids of the storage container of FIGURE 1 are shown opened to a downwardly-directed vertical position and a center lid is separated.

**[0017]** FIGURE 8 is a detailed view of a hinge assembly according to one aspect of the present invention.

**[0018]** FIGURES 9, 10, and 11 are side elevation views of the hinge assembly shown in FIGURE 8 showing different orientations of the lid.

**[0019]** FIGURE 12 is an elevation view of a hinge block according to one aspect of the present invention.

**[0020]** FIGURE 13 is a side elevation view of the hinge block shown in FIGURE 12 as viewed along lines 13-13 in FIGURE 12.

**[0021]** FIGURE 14 is a perspective view of a liquid collector shown in FIGURE 7 according to one aspect of the present invention.

**[0022]** FIGURE 15 is a cross-sectional view of the liquid collector shown in FIGURE 14 as viewed along view lines 15-15 in FIGURE 14.

**[0023]** FIGURE 16 is a perspective view of an alternate aspect of the present invention, portions of which are cut away to illustrate indeterminate length, which is the sole difference between this aspect and the aspect shown in FIGURES 1 through 4.

#### DETAILED DESCRIPTION OF FIGURES

**[0024]** The details and scope of aspects of the present invention can best be understood upon review of the attached figures and their following descriptions.

FIGURE 1 is a perspective view of a storage container 10 according to one aspect of the present invention. Storage container 10 is marketed under the name "Mystic River Storage Box & Buffet" by Brookbend Outdoor Furniture of Hopkinton, Massachusetts. FIGURE 2 is a plan view of the storage container 10 shown in FIGURE 1. FIGURE 3 is a front elevational view of the storage container 10 shown in FIGURE 1, where the rear

elevational view is a mirror image thereof. FIGURE 4 is a right side elevational view of the storage container 10 shown in FIGURE 1, where the left side elevational view is a mirror image thereof. Storage container 10 includes a main body or enclosure 11 having an open top (see FIGURE 5), a first end 12 and a second end 13, two side panels 14, two end panels 15, and a bottom panel 16 (not shown). According to this aspect of the invention, storage container 10 also includes at least one hinged lid 16, 17, and one or more removable or free lids 18. Hinged lids 16 and 17 may be pivotally mounted to end panels 15 by means of hinge assembly 20. (The details of hinge assembly 20 are shown in FIGURE 8.) Free lid 18 is adapted to movably mount to the top of main body 11, for example, slidably mount or removably mount to the top of main body 11. Main body 11 may be formed by joining side panels 14 and end panels 15 at their respective ends. As shown in FIGURES 1 through 4, in one aspect of the invention, side panels 14 and end panels 15 may be joined to vertical supports 21. Vertical supports 21 may be about the same length as the width of side panels 14 and end panels 15 or, as shown in FIGURES 1-4, vertical supports 21 may be longer than the width of side panels 14 and end panels 15 wherein vertical supports 21 provide extensions that elevate side panels 14 and end panels 15 above the surface upon which storage box 10 is placed.

**[0025]** FIGURES 5, 6, and 7 illustrate the operation of lids 16, 17, and 18 of storage container 10 according to one aspect of the present invention. FIGURE 5 is a perspective view of storage container 10 shown in FIGURE 1 in which hinged lids 16 and 17 are shown partially opened. FIGURE 6 is a perspective view of storage container 10 shown in FIGURE 1 in which hinged lids 16 and 17 are shown opened to a horizontal position, for example, to provide a horizontal serving surface. FIGURE 7 is a perspective view of storage container 10 shown in FIGURE 1 in which hinged lids 16 and 17 opened to a downwardly-directed vertical position and a free lid 18 is shown separated from main body 11. As shown, in FIGURE 5, according to one aspect of the invention, lids 16 and 17 may be restrained in their opened position by one or more tension members 22 (shown in phantom), for example, a cord, wire, or chain mounted to lids 16, 17 (for example, to the underside of lids 16, 17) and to main body 11, for

example, to the inner side of side panels 14. As shown, in FIGURE 6, according to one aspect of the invention, lids 16 and 17 may be supported in their horizontal positions by one or more compression members 24 (shown in phantom), for example, a rod, stick, or pole, which engages lids 16 and 17 and main body 11, for example, engages end panel 15. As also shown in FIGURE 6, free lid 18 may be free to slidably move along the upper rim of main body 11 as shown by the double arrow 26.

**[0026]** As shown in FIGURE 7, free lid 18 may also be removed from main body 11. For example, in one aspect of the invention, free lid 18 may be removed to allow access into the inside of main body 11. In one aspect of the invention, free lid 18 may be removed from main body 11 and provide a serving tray, for example, for the food or beverage stored in storage container 10. FIGURE 7 also illustrates a liquid collector or water lip 40 mounted to free lid 18 according to one aspect of the present invention. (The details of liquid collector 40 are illustrated and described with respect to FIGURES 14 and 15 below.) As shown in FIGURE 7, liquid collector 40 is adapted to be mounted to one or more lids 16, 17, or 18 and be fit within the open top of storage container 10 when lids 16, 17, or 18 is in the closed position.

**[0027]** FIGURES 5 and 6 also illustrate typical uses of storage container 10. For example, in one aspect of the invention, storage container 10 may contain removable sub-containers 22 (shown in phantom), for example, removable buckets for storing ice, beverages, food, and like comestibles. In another aspect of the invention, storage container 10 may be used to store articles, for example, seat cushions 24 (shown in phantom), toys, towels, pool accessories, supplies, and related articles used for pleasure or entertaining, for instance, when storage box 10 is located near a patio, pool, or beach.

**[0028]** FIGURE 8 illustrates a detailed perspective view of the hinge assembly 20 according to one aspect of the present invention. Hinge assembly 20 includes at least one hinge block 30 having a through hole 32 and at least one dowel pin 34 which passes through one or more through holes 32 and through at least one corresponding through hole in lid 16. According to one aspect of the invention, at least two hinge

blocks 30 may be used to attach lid 16, for example, three or even four or more hinge blocks 30 may be used. Lid 16 includes at least one notch 36 into which one or more hinge blocks 30 may be inserted. Though lid 16 is shown in FIGURE 8, hinge assembly 20 may also be used for mounting lid 17.

**[0029]** FIGURES 9, 10, and 11 illustrate side elevation views of hinge assembly 20 shown in FIGURE 8 showing different orientations of the lid 16. In FIGURE 9, lid 16 is positioned in a horizontal position wherein at least part of enclosure 11 is covered. In FIGURE 10, lid 16 is oriented at an angle to the horizontal, for example, between about 30 and 60 degrees, for instance, as supported by a chain 22 shown in FIGURE 5. In FIGURE 11, lid 16 is positioned in a vertical position, for example, as shown in FIGURE 7. According to one aspect of the invention, lid 16 is mounted to enclosure 11 wherein lid 16 may be rotated at least 90 degrees from the horizontal position shown in FIGURE 9. In one aspect of the invention, lid 16 may be rotated at least 180 degrees, and typically, at least 270 degrees from the horizontal position shown in FIGURE 9.

**[0030]** As shown in FIGURE 9, hinge block 30 may be mounted to end panel 15 by means of conventional fastening means, for example, by means of an adhesive and/or one or more mechanical fasteners 38, for example, one or more wood screws and/or one or more dowel pins.

**[0031]** FIGURE 12 illustrates an elevation view of one hinge block 30 according to one aspect of the present invention. FIGURE 13 illustrates a side elevation view of hinge block 30 shown in FIGURE 12 as viewed along view lines 13-13. As shown in FIGURE 12, hinge block 30 may comprise a first section 42 which is adapted to be mounted to an end panel, for example, end panel 15 of enclosure 11, and a second section 44 having a through hole 46 adapted to accept a rod, for example, rod 34 shown in FIGURE 8. First section 42 may be generally a rectangular parallelepiped in shape. In one aspect of the invention, first section 42 may include radiused corners 48, 50, for example, having radiuses between about 10 mm and about 20 mm, for example, in one aspect of the invention corner 48 may have a radius of about 12.5 mm, and corner 50 may have a radius of about 17 mm. First section 42 may also be circular cylindrical in

shape, for example, a semicircular shape. First section 42 may include one or more dowel pin holes 52 for engaging one or more dowel pins mounted in end panels 15. In one aspect of the invention, dowel pin holes 52 may be positioned along the centerline of hinge 30, as shown in FIGURE 13, but in another aspect of the invention dowel pin holes 52 may be staggered or off centerline. Dowel pin holes 52 may typically have a diameter of between about 5 mm and about 15 mm, for example, in one aspect of the invention, dowel pin holes 52 may have a diameter of about 10 mm. Dowel pin holes 52 may typically have a depth of between about 5 mm and about 20 mm, for example, in one aspect of the invention, dowel pin holes 52 may have a depth of about 16 mm.

**[0032]** In one aspect of the invention, second section 44 may comprise a rectangular or a semi-circular section, for example, a semi-circular projection on first section 42. Second section 44 may be radiused and have a radius 54 of between about 10 to 30 mm, for example, in one aspect of the invention, radius 54 may be about 18 mm. Through hole 46 may have a diameter of between about 5 mm and about 15 mm, for example, in one aspect of the invention, through hole 46 may have a diameter of about 10 mm. A geometric transition 56 may be provided between first section 42 and second section 44. Transition 56 may have a radius of between about 10 mm and about 30 mm, for example, in one aspect of the invention, transition 56 may have a radius of about 22 mm.

**[0033]** As shown in FIGURES 12 and 13, hinge block 30 has a length 58, a first width 60, a second width 61, and a thickness 62. According to one aspect of the invention, length 58 may be between about 50 mm and about 200 mm, for example, in one aspect of the invention, length 58 may be about 108 mm. According to one aspect of the invention, first width 60 may be between about 30 mm and about 100 mm, for example, in one aspect of the invention, first width 60 may be about 50 mm. According to one aspect of the invention, second width 61 may be between about 12 mm and about 75 mm, for example, in one aspect of the invention, second width 61 may be about 22 mm. According to one aspect of the invention, thickness 62 may be between about 12 mm and about 400 mm, for example, in one aspect of the invention, thickness



62 may be about 37 mm.

**[0034]** Sections 42 and 44 may comprise an integral component made of one or more materials, as shown in FIGURE 12 and 13, or a two-part component comprised of one or more materials. In one aspect of the invention, hinge block 30 may be made from any convenient structural material, for example, hinge block 30 may be metallic or non-metallic. In one aspect of the invention, hinge block 30 may be metallic and be made from iron, steel, stainless steel, aluminum, titanium, or any other structural metal. In one aspect of the invention, hinge block 30 may be made from plastic, for example, from polyethylene (PE), polypropylene (PP), polyester (PE), acrylonitrile butadiene styrene (ABS), among other plastics. In one aspect of the invention, hinge block 30 may be made from wood, for example, hardwood, for instance, teak, birch, cherry, ash, oak, chestnut, aspen, maple, or eucalyptus, or softwood, for instance, spruce, fir, pine, cedar, juniper, hemlock, or other suitable woods. In one aspect of the invention, hinge block 30 may be made from composite materials, for example, laminated wood-containing materials, or plywood.

**[0035]** In one aspect of the invention, hinge block 30 may be made from laminated wood, for example, as shown in FIGURE 13, hinge block 30 may be made from at least two, or at least three, wood laminations 64, 65, and 66. Laminations 64, 65, and 66 may comprise the same or dissimilar wood. In one aspect of the invention, the inner lamination 65 may have its wood grain oriented in a different direction than the direction of the wood grain in the outer laminations 64 and 66. For example, in one aspect, inner lamination 65 may have its wood grain oriented in a general direction substantially parallel to thickness 62 of hinge block 30 and outer laminations 64 and 66 may have their wood grains oriented in a general direction substantially parallel to the length 58 of hinge block 30. In other aspects of the invention, the direction of the wood grain in laminations 64, 65, and 66 may be non-parallel or oblique to the direction of the thickness 62 and length 58 of hinge block 30.

**[0036]** FIGURE 14 illustrates a perspective view of a liquid collector 40 shown in FIGURE 7 above. According to this aspect of the present invention, and as shown in

FIGURE 7, liquid collector 40 may be mounted to one or more lids 16, 17, or 18 to minimize or prevent the leakage of liquids between the lids of storage container 10. FIGURE 15 illustrates a cross-sectional view of liquid collector 40 as viewed along view lines 15-15 in FIGURE 14. As shown in FIGURE 14, liquid collector 40 comprises an elongated member, plate, or board 70 having one or more elongated recesses or troughs 72 extending in the direction of elongation of board 70. As shown in FIGURE 15, board 70 is mounted to a lid whereby trough 72 is positioned under the gap 74 between two adjacent lids. In the aspect of the invention shown in FIGURE 15, representative lids 16 and 17 (See FIGURES 1-7.) are shown in phantom to show the relationship of liquid collector 40 to the lids and to the gap 74 between the lids. The edges and depth of trough 72 may be radiused as shown in FIGURES 14 and 15. As shown in FIGURES 14 and 15, trough 72 may be positioned to one side of board 70, that is, where the centerline of trough 72 is not aligned with the centerline of board 70, though in another aspect of the invention, trough 72 may be positioned along the centerline of board 70.

**[0037]** Plate or board 70 may comprise an integral component made of one or more materials, as shown in FIGURE 14 and 15, or a two-part component comprised of one or more materials. In one aspect of the invention, plate or board 70 may be made from any convenient structural material, for example, plate or board 70 may be metallic or non-metallic. In one aspect of the invention, plate or board 70 may be made metallic and be from iron, steel, stainless steel, aluminum, titanium, or any other structural metal. In one aspect of the invention, plate or board 70 may be made from plastic, for example, from polyethylene (PE), polypropylene (PP), polyester (PE), acrylonitrile butadiene styrene (ABS), among other plastics. In one aspect of the invention, plate or board 70 may be made from wood, for example, hardwood, for instance, teak, birch, cherry, ash, oak, chestnut, aspen, maple, or eucalyptus, or softwood, for instance, spruce, fir, pine, cedar, juniper, hemlock, or other suitable woods. In one aspect of the invention, plate or board 70 may be made from composite materials, for example, laminated wood-containing materials, or plywood.

**[0038]** Liquid collector 40 may be mounted to a lid, for example, to lid 16, by mechanical fasteners, adhesives, or welding. In one aspect of the invention, liquid collector 40 may be mounted to a lid by means of one or more dowel pins 76 and one or more screws 78. Board or plate 70 may be provided with pre-drilled holes 77 to insert screws 78. For example, in the aspect of the invention shown in FIGURES 14 and 15, liquid collector 40 is mounted to a lid by means of three dowel pins 76 and three counter-sunk screws.

**[0039]** According to one aspect of the invention, liquid collector 40 may have a length from between about 200 mm and about 1000 mm, for example, in one aspect of the invention, liquid collector 40 may be about 550 mm in length. According to one aspect of the invention, liquid collector 40 may have a width from between about 50 mm and about 500 mm, for example, in one aspect of the invention, liquid collector 40 may be about 70 mm in width. According to one aspect of the invention, liquid collector 40 may have a thickness from between about 5 mm and about 100 mm, for example, in one aspect of the invention, liquid collector 40 may be about 20 mm thick. The length and width of trough 72 will typically be a function of the length and width of plate or board 70. In one aspect of the invention, the length of trough 72 is typically about 90% of the length of board 70 and the width of trough 72 is about 50% of the width of board 70. In one aspect of the invention, where the length of board 70 is about 500 mm, the length of trough 72 may be about 450 mm, and where the width of board 70 is about 70 mm, the width of trough 72 may be about 35 mm.

**[0040]** FIGURE 16 is a perspective view of a storage container 110 according to another aspect of the present invention. According to the aspect of the invention shown in FIGURE 16, portions of storage container 110 have been cut away to illustrate the indeterminate length of storage container 110, which is the sole difference between storage container 110 and storage container 10 shown in FIGURES 1 through 4. Similar to storage container 10, storage container 110 includes a main body 111 having a first end 112 and a second end 113, two side panels 114, two end panels 115, and a bottom panel 116 (not shown). According to this aspect of the invention, storage

container 110 also includes at least one hinged lid 116, 117, and one or more free lids 118. Hinged lids 116 and 117 may be pivotally mounted to end panels 115 by means of hinge assembly 120, which may be similar to hinge assembly 20 shown in FIGURE 8. One or more free lids 118 may be adapted to movably mount to the top of main body 111, in a manner similar to free lid 18 discussed above. Also, hinged lids 116 and 117 may be adapted to pivotally rotate in a manner similar to hinged lids 16 and 17 discussed above.

**[0041]** The components of storage containers 10 and 110 may be made from any convenient structural material. The components of storage containers 10 and 110 may be metallic or non-metallic. In one aspect of the invention, the components of storage containers 10 and 110 may be metallic and be made from iron, steel, stainless steel, aluminum, titanium, or any other structural metal. In one aspect of the invention, the components of storage containers 10 and 110 may be made from plastic, for example, from polyethylene (PE), polypropylene (PP), polyester (PE), acrylonitrile butadiene styrene (ABS), among other plastics.

**[0042]** In one aspect of the invention, the components of storage containers 10 and 110 may be made from wood, for example, hardwood, for instance, teak, birch, cherry, ash, oak, chestnut, aspen, maple, or eucalyptus; or softwood, for instance, spruce, fir, pine, cedar, juniper, hemlock, or other suitable woods. In one aspect of the invention, the components of storage containers 10 and 110 may be made from composite materials, for example, laminated wood-containing materials, or plywood. In one aspect, the components may be made from marine-grade plywood.

**[0043]** The components of storage containers 10 and 110 may be fabricated from unitary structures, such as single plates or boards, or they may be fabricated from component parts. For example, as shown in FIGURES 1- 9, the components of storage containers 10 and 110, that is, the lids 16, 17, and 18; side panels 14; end panels 15; and bottom panel 16 may be fabricated from assembled parts. In one aspect of the invention, the components may be fabricated from individual components, for example, wood slats, mounted in a frame, for example, a wooden frame. The components of

storage containers 10 and 110 may be fabricated from conventional means, for example, using adhesives (such as water resistant or water-proof glues), mechanical fasteners (such as nails, screws, bolts and nuts) or welding (when fabricated from weldable material). When mechanical fasteners are used, in one aspect of the invention, components of storage containers 10 and 110 may be fabricated wherein the mechanical fasteners are not visible. However, in one aspect of the invention, the components of storage containers 10 and 110 may be fabricated using mortise and tenon joinery.

**[0044]**        Though there is no limit to the size of storage containers 10 and 110, in one aspect of the invention, storage containers 10 and 110 may have an overall length of between about 2 feet and about 12 feet, for example, in one aspect of the invention, storage containers 10 and 110 may have a length of about 5 feet. In one aspect of the invention, storage containers 10 and 110 may have a height of between about 1 foot and about 5 feet, for example, in one aspect of the invention, storage containers 10 and 110 may have a height of about 29 inches. In one aspect of the invention, storage containers 10 and 110 may have a width of between about 1 foot and about 5 feet, for example, in one aspect of the invention, storage containers 10 and 110 may have a width of about 24.5 inches.

**[0045]**        As will be appreciated by those skilled in the art, features, characteristics, and/or advantages of the storage containers described herein, may be applied and/or extended to any embodiment (for example, applied and/or extended to any portion thereof).

**[0046]**        Although several aspects of the present invention have been depicted and described in detail herein, it will be apparent to those skilled in the relevant art that various modifications, additions, substitutions, and the like can be made without departing from the spirit of the invention and these are therefore considered to be within the scope of the invention as defined in the following claims.

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